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Attitudes of Gynecologists toward Referral of Women to Breast Imaging Clinics for Breast Cancer Screening or Diagnosis

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Abstract

Purpose: To investigate whether gynecologists considered the age of women when requesting ultrasound (US) and/or mammography examinations. Furthermore, to determine in which situations gynecologists referred patients to breast imaging clinics for breast examinations, and aimed to establish the reasons behind cases of non-referral.

Materials and methods: A questionnaire-based survey was conducted from February to April 2023 among gynecologists practicing at government, university, or private hospitals/centers. The participants were contacted through an online Web link (www.googledocs.com).

Results: The questionnaire was completed by 80 gynecologists. In total, 96.2% of the participants referred women to breast imaging clinics. The proportion of female physicians (70%) was higher than that of male physicians, and 55% were younger than 40 years. Menopause, hormone replacement therapy, and hereditary/genetic or familial breast cancer were the most commonly considered risk factors when referring women. Overall, 75% of participants requested mammography for women aged ≥ 40 years. For women between the ages of 30 and 40, mammography was requested by 40% of physicians. For women younger than 30, US was requested by 70% of participants, while a small number of participants (7.5%) requested mammography if deemed necessary.

Conclusion: Gynecologists tend to refer women to breast imaging clinics for screening rather than for diagnostic purposes. Female gynecologists have a higher tendency for referral, especially if there is a risk factor involved. Seminars or courses at gynecology conferences can be organized by experienced breast imaging specialists to give detailed information about breast cancer and examination methods according to patient age. This will ensure better breast assessment.

Keywords
Gynecologists' attitudes · Breast screening · Breast imaging · Screening mammography · Breast examinations

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Introduction

Breast cancer is the most common malignancy in women worldwide and is a leading cause of cancer death among women [1]. Therefore, the need for breast examinations especially for early diagnosis of breast cancer is becoming more important today. In routine practice in Turkey, generally, breast surgeons are the group of physicians who refer women to radiology clinics for breast examinations. They are well-informed and experienced when evaluating breast diseases. However, most women consider a gynecologist as the primary physician to consult about breast disorders. Women are comfortable with their gynecologists and trust them very much.

On the other hand, studies indicate that gynecologists are more likely to encounter a patient with breast cancer than a patient with any other gynecologic cancer [2].

In our breast imaging clinic, we examine women who are referred to us from different clinics for various reasons for breast examination. However, we have noticed that the number of women who are referred by gynecologists has been very low and in some cases the women were referred for only a breast ultrasound (US) examination even though these women were at the age of screening (age ≥ 40; according to national guidelines). This prospective study aimed to investigate whether gynecologists consider the age of the woman when requesting US and/or mammography examinations, as well as to determine in which situations they refer women to breast imaging clinics for a breast examination and to establish the reasons for non-referrals.

Materials and method

An anonymous survey was first created by the radiologist who designed the study and had experience in breast imaging for more than a decade. This was then given as a paper survey to three other radiologists who had more than 15 years of experience in breast imaging, and they were asked to determine whether the questions of the survey were easily comprehensible for gynecologists. They were also asked to make remarks as input. Based on the radiologists' feedback and their input, the survey was updated and converted to an online version and sent to three gynecologists by e-mail. These gynecologists were asked to check the survey, and the final version was prepared according to their feedback and was used for this study.

The questionnaire-based survey was conducted from February to April 2023 (2 months) among various gynecologists practicing at government, university, and private hospitals/centers. The participants were contacted through an online Web link (www.googledocs.com).

The ethical committee of Medipol University approved this prospective observational study (decision number: 177, date: 16.02.2023) and informed consent was obtained from all participants.

The questionnaire was designed as five parts: The first part consisted of sociodemographic details regarding age, gender, education qualifications, government/private hospital practice, marital status, having children or not, family history of breast cancer, and participation in a seminar about breast cancer or not. The second part included questions about the situations in which the participants recommended their patients visit a breast imaging clinic for a breast examination. These questions were related to considerations of risk factors, symptoms, or findings such as familial or genetic/hereditary breast cancer, nulliparity, use of oral contraceptive pills, hormone replacement therapy (HRT), in vitro fertilization (IVF) therapy, being at a menopausal stage, consideration of mastitis/mass in lactation/pregnancy, increased patient anxiety, findings during self-examination, findings during clinical examination, usual pain, and pain not related to the menstrual cycle. In the third part, the questions sought to learn the reasons for not referring the patients to breast imaging clinics. In the fourth part, the question "Do you think that false positives and overdiagnosis of these examinations are high?" was asked with a yes/no format for the answer. If the answer was "yes" a further question asked: "For which examination do you consider this: US and/or mammography?" The last part of the questionnaire consisted of questions assessing whether gynecologists acted according to the age of the woman when requesting breast examination (US and/or mammography).

Descriptive statistics and percentage distributions were used for statistical purposes.

Results

A total of 119 gynecologists were asked to participate in the study. Of these, 80 gynecologists, working as residents, specialists, or academics, completed the questionnaire and were included in the study.

The sociodemographic characteristics of the participants are summarized in **Table 1**.

Overall, 77 participants indicated that they referred their patients to breast imaging clinics for breast examination, while three participants did not. The situations for referrals are summarized in **Table 2** and the reasons for not referring are listed in **Table 3**.

In total, 52 participants indicated that they do not consider the rate of false positives and overdiagnosis of mammography or US examinations to be high, while 23 participants stated they did not have an opinion about the answer to this question. Five participants answered "yes" to the question and indicated that the answer applied to both US and mammography.

According to the last part of the questionnaire, 62 participants stated that they took the age of the women into consideration when requesting US and/or mammography. The answers are listed in **Table 4**.

Discussion

When women have breast problems, they commonly consult the gynecologist who has evaluated or treated them earlier for a gynecological problem or followed them up during pregnancy. The gynecologist must reassure the woman, both if she has benign breast disease or is worried about breast cancer. On the other hand, many women feel that breast cancer treatment and its sequelae are worse than the disease because of the problems to be faced, such as body image, family and social adjustments, limitation in arm movements, cosmesis, future pregnancies, depression etc. [3]. In such cases, the gynecologist should guide the woman to have a breast evaluation and if needed initiation of treatment without any delay. There are a few studies that evaluate gynecologists' knowledge about screening, risk factors, clinical signs, and treatment of breast cancer [4–9]. However, some of these studies are very old and some have evaluated different groups of healthcare professionals besides gynecologists. This is the only study that evaluates the attitudes of gynecologists related to referring women to breast imaging clinics for breast examination.

In this study, 96.2% of the participants (77/80) indicated that they referred their patients to breast imaging clinics for breast examination. This was unexpectedly high; however, in general practice, gynecologists do not refer women to our breast

Table 1 Sociodemographic characteristics of the study participants

Participants	*n*=80	%
Age, years		
< 25	2	2.5
25–40	42	52.5
40–65	33	41.2
> 65	3	3.7
Gender		
Female	56	70
Male	24	30
Educational qualification		
Resident	29	36.2
Specialist	34	42.5
Academic	17	21.2
Government/private practice		
Government	64	80
Private	16	20
Marital status		
Married	46	57.5
Not married	34	42.5
Have children		
Yes	43	53.7
No	37	46.2
Family history of breast cancer		
Yes	32	40
No	48	60
Attended a seminar about breast cancer		
Yes	40	50
No	40	50

Table 2 Reasons for referring women to breast imaging clinics

Reason	*n*=77	%
Familial or hereditary/genetic breast cancer	51	66.2
Nulliparity	10	12.9
Usage of oral contraceptive pills	27	35
HRT	56	72.7
IVF therapy	16	20.7
Menopause	56	72.7
Consideration of mastitis/mass in lactation	40	51.9
Increased patient anxiety	25	32.4
Findings at SE	51	66.2
Findings at CE	48	62.3
Usual pain	22	28.5
Pain not related to menstrual cycle	39	50.6
If in doubt I request MRI	10	12.9

HRT hormone replacement therapy, *IVF* in vitro fertilization, *SE* self-examination, *CE* clinical examination

imaging clinic for either screening or diagnostic purposes as suggested by the results of this study. Singh et al. [4] similarly stated that, despite gynecologists' knowledge of the risk factors and clinical signs of breast cancer seeming to be adequate, this is not evident in their clinical practice. Moreover, our clinic is private, and perhaps the low rate of referrals is due to economic reasons. Only 20% of the participants practiced in private centers/hospitals in this study, and the rest practiced in government hospitals in which breast screening is free in Turkey. In this study, more than 50% of the physicians were young (age of < 40), and it could be that younger physicians request more radiological examinations than their older colleagues do, because they encounter more cases of cancer than older physicians encountered during their medical practice period and do not want to miss a possible cancer. However, in the study by Luire et al. [10] it was reported that screening rates among older physicians are higher than those among younger physicians because physicians mature with age and gain practical experience.

The main reason for the high referral rates may be the high number of female physicians in this study (56/80). In our opinion, they have a greater tendency to refer their patients to breast imaging clinics for breast examination. This may be only related to being a woman or may be associated with situations, such as being married or having children, in which women worry about whether they have a disease like cancer. In this study, more than 50% of the participants were married and had children. Studies also show women are more likely to receive breast and cervical cancer screening if they see a female physician [9, 10]. Nevertheless, there is an unequal sex distribution of patients between male and female physicians, with more women choosing female physicians [11–13]. Another reason for the high referral rates may be that a considerable number of gynecologists (50%) in this study had attended a seminar about breast cancer, which may have increased their awareness. It has been reported [14] that, compared to internal medicine or family physicians, gynecologists favor aggressive breast cancer screening for women from 40 through 79 years of age, including women with a short life expectancy.

When evaluating the reasons for referrals, being of menopausal age was the most common finding (72.7%) similar to the situation in our clinic in daily practice. In agreement with the findings of Singh et al., HRT (72.7%) and hereditary/genetic or familial breast cancers (66.2%) were the other common conditions that were considered risk factors. The ratio of nulliparity was also high (75.6%) in the study by Singh et al.; however, it was found to be quite low in this study (12.5%). Consideration of risk factors somewhat prompts gynecologists to refer women for breast examination. In this study, a small number of participants (3.7%) indicated that they did not refer their patients for breast examination in breast imaging clinics. The reasons for not referring were, firstly, the thought that breast evaluation was a general/breast surgeon's job, not the gynecologist's, and thus they were referring the patients to a surgeon; and, secondly, when the patient did not want to have breast examination.

Cancers detected through screening but that would never come to light in a patient's lifetime are referred to as overdiagnosis. In a study that reviewed 36 articles published between 2001 and 2018 assessing the benefit of breast cancer screening [15], it was reported that the rate of overdiagnosis is estimated to be 0–50% in randomized trials; however, the mortality reduction due to breast cancer

Table 3 Reasons for not referring women to breast imaging clinics	
	Number of participants
Breast evaluation is not my job, it is the job of a general/breast surgeon	2
I do not know for whom, when, and which examination should be requested	0
These examinations are not cost-effective	
I do not have any opinion about breast cancer frequency	0
I consider that the frequency of breast cancer is low	0
US and mammography examinations are time-consuming	0
I am worried about the radiation dose of mammography	0
When the patient does not want to a have breast examination	1
Other	0

Table 4 Breast examination requests according to women's age			
Age (years)	< 30	30–40	≥ 40
Only US	56 (70%)	30 (37.5%)	2 (2.5%)
Mammography if needed	6 (7.5%)	26 (32.5%)	2 (2.5%)
Only mammography	0	2 (2.5%)	38 (47.5%)
Both US and mammography	0	4 (5%)	20 (25%)
Participants answering this question: $n = 62$			

screening is estimated at 15–30%. Overdiagnosis cannot directly be measured because we cannot know which tumors would lead to death if left untreated and which would not, and this is a matter of debate. From the point of view of US examinations, multiple studies showed that US detects small, invasive, node-negative cancers [16, 17]; however, it has high false-positive rates and may lead to an increased overdiagnosis [18, 19]. Even if some cancers are overdiagnosed with US, there will be a greater proportion of lethal breast cancers that are successfully treated thanks to US screening [20]. These controversies over the issue of overdiagnosis might be a reason for not referring women to screening. In this study, 65% of the participants (52/80) indicated that they did not consider the rate of false positives and overdiagnosis of mammography or US examinations to be high. Only five participants (6.2%) stated that they consider both US and mammography to lead to overdiagnosis. Although breast cancer screening is associated with potential overdiagnosis, it has been a useful strategy in the fight against cancer over the years. Moreover, the issue of overdiagnosis still needs to be estimated more accurately and defined more precisely.

Women who undergo US screenings are expected to be younger, have higher breast density, and may also have higher breast cancer risk than the population undergoing mammography screening [20]. On the other hand, US is inappropriate as a stand-alone screening method for women aged ≥ 40 [21]. Based on the American College of Radiology appropriateness criteria [22], annual screening with mammography starts at the age of ≥ 40 in Turkey. This was the most important aim of this study, to understand whether the gynecologists were acting according to the age of the women when requesting breast examinations. According to the results of this study, the majority of the gynecologists (75%) indicated that they requested mammography (47.5% only mammography, 25% both mammography and US, 2.5% mammography if needed) for women aged ≥ 40. The rate of participants who requested only US for this age group was very low (2.5%) and was less than we meet in daily practice. For women between the ages of 30 and 40, a considerable number of participants (7.5%) indicated that they requested only mammography or both mammography and US, although mammography should be requested if needed for this age group. For women under the age of 30, most of the participants (70%) indicated that they requested only US, while a small number of participants (7.5%) requested mammography if needed. These rates were compatible with the rates expected (according to ACR appropriateness criteria) for this age group.

Limitations

The limitations of this study include the fact that benign breast diseases were not part of the questions on the conditions for referrals. Sometimes physicians refer women for evaluation of fibroadenomas or cysts. However, this was not the main focus of the study. The number of participants was relatively low, and this may have been due to the strenuous schedules of gynecologists and the lack of time to participate in surveys like this one, even though the time to answer the survey questions was not too long. Lastly, other groups of physicians were not asked to participate in the survey and a comparison could not be made. However, the dominant group intended to be evaluated was gynecologists.

Practical conclusion

- **Gynecologists tend to refer women to breast imaging clinics for screening rather than for diagnostic purposes.**
- **Screening is more important when the women are at the menopausal stage or there is a consideration of risk factors such as hormone replacement therapy or hereditary/genetic or familial breast cancers.**
- **Female gynecologists have a greater tendency to refer women to breast imaging clinics for breast examination.**
- **Seminars or courses in gynecology conferences can be organized by experienced breast imaging specialists to give detailed information about breast cancer and examination methods according to age, in order to ensure better beast assessment.**

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Declarations

Conflict of interest. B. Tutar declares that she has no competing interests.

The ethical committee of Medipol University approved this prospective observational study (decision number: 177, date: 16.02.2023) and informed consent was obtained from all participants.

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Zusammenfassung

Einstellung der Gynäkologen zur Überweisung von Frauen an Kliniken für Brustbildgebung zur Brustkrebsvorsorge oder -diagnose

Zweck: Es wurde untersucht, ob Gynäkologen das Alter der Frauen berücksichtigen, wenn sie eine Sonographie (Ultraschall, US) und/oder Mammographie beantragen. Darüber hinaus wurde ermittelt, in welchen Fällen Gynäkologen Patientinnen zur Brustuntersuchung an Kliniken für bildgebende Verfahren überwiesen haben, wobei die Gründe für die Nichtüberweisung eruiert werden sollten.
Materialien und Methoden: Von Februar bis April 2023 wurde eine fragebogenbasierte Umfrage unter Gynäkologen durchgeführt, die an staatlichen, universitären oder privaten Krankenhäusern/Zentren praktizieren. Die Teilnehmerinnen wurden über einen Online-Web-Link kontaktiert (www.googledocs.com).
Ergebnisse: Der Fragebogen wurde von 80 Gynäkologen ausgefüllt. Insgesamt überwiesen 96,2 % der Teilnehmerinnen Frauen an Kliniken für Brustbildgebung. Der Anteil der weiblichen Ärzte (70 %) war höher als der Anteil männlicher Ärzte, und 55 % waren jünger als 40 Jahre. Menopause, Hormonersatztherapie und erblicher/genetischer oder familiärer Brustkrebs waren die am häufigsten genannten Risikofaktoren bei der Überweisung von Frauen. Insgesamt forderten 75 % der Teilnehmerinnen eine Mammographie für Frauen im Alter von ≥ 40 an. Bei Frauen im Alter zwischen 30 und 40 Jahren wurde die Mammographie von 40 % der Ärzte angefordert. Bei Frauen unter 30 Jahren verlangten 70 % der Teilnehmerinnen eine US-Untersuchung, während nur wenige Teilnehmerinnen (7,5 %) eine Mammographie verlangten, wenn sie diese für notwendig hielten.
Schlussfolgerung: Gynäkologen überweisen Frauen eher zum Screening als zu diagnostischen Zwecken an Kliniken für Brustbildgebung. Gynäkologinnen neigen eher zu einer Überweisung, insbesondere wenn ein Risikofaktor vorliegt. Auf gynäkologischen Konferenzen können Seminare oder Kurse von erfahrenen Spezialisten für Brustbildgebung organisiert werden, um detaillierte Informationen über Brustkrebs und altersgerechte Untersuchungsmethoden zu vermitteln; dies erlaubt eine bessere Beurteilung der Brust.

Schlüsselwörter
Ansicht der Gynäkologen · Brustkrebs-Screening · Brustbildgebung · Vorsorge-Mammographie · Brustuntersuchungen